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Sustainably Ever After: Extending the Life of Bridal Gowns & Eliminating Fabric Waste through Zero Waste Pattern Cutting & Modular Design

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There are two realities when it comes to the white wedding gown. The first reality is that it is a powerful garment saturated with perceived tradition and symbolism. In this, how the bride looks is pivotal; the recent media frenzy over the style of Kate Middleton's wedding gown in 2011 indicates that design is critical to the gown's cultural value. The second reality is the negative impact of the fashion industry. While the industry is no stranger to criticism for its lack of transparent sustainable practices, the limited use of bridal gowns, combined with the industry-wide average 15% fabric waste (Rissanen, 2005) in fashion production provides mark this particular garment as an extreme example of wasteful design. However, for the innovative designer, this problem becomes a creative opportunity.

Using non-traditional design approaches, including modular design – wherein the garment or ensemble is designed to be restyled or modified for additional "looks" to extend garment use, and Zero Waste Pattern Cutting – wherein every scrap of fabric from a designated yardage is used in the construction of a garment, this project resulted in the creation of a bridal gown that exponentially increases sustainability compared to traditional models, by extending garment use through 13 modular variations, and eliminating all fabric waste.

Since aesthetics are critical to adhering to iconic bridal standards, and since the non-traditional design approaches used in this research process typically produce garments with unique or avant-garde aesthetic properties, careful consideration was required at every stage. Observational research showed that the iconic bridal aesthetic typically includes an open neckline, fitted waist, and full skirt. The application of Split Cloth Technique (Wang & Montgomery, 2013) enabled the creation of form-fitting garments and garment components. By splitting the cloth in

sections (without cutting through the yardage and separating into individual pieces), these openings became armholes, neck openings, and side seams, allowing adapted draping techniques and enabling full yardage use with body-contoured results.

The final product of this research is a gown that adheres to the traditional bridal aesthetic of open neckline, fitted waist, and full skirt. As the design uses every scrap of the designated yardage, zero fabric waste was created in production. The design is made of two main components, a short, knee length dress and a long floor length skirt that can be layered on top. The bodice features a modular asymmetrical, open neckline, fitted waist, modified princess seams with boning, and tucks and darts at the back. The bottom half of the dress is a modified circle skirt, created by joining many small panels from a rectangular piece of yardage and fastening to the bodice at the waist seam. The long skirt was created in the same way as the bottom half of the short dress, but using more fabric to create a fuller, longer skirt. The lower half of the long skirt lining is detachable; the front half of the lower lining becomes a knee-length wraparound skirt, the back half becomes a vest that can be worn right side up or upside down for two different looks. A sash accompanies the entire ensemble and can be used to secure the vest, or to cover the waist seam where the long skirt sits on top of the short dress. In all, the gown can be transformed into at least 13 different modular variations, which exponentially extends the life of the garment for post-wedding use. It satisfies the criteria of a traditional bridal aesthetic design with open neckline, fitted waist, and full skirt, and has created *zero* fabric waste in the production process. Each piece is distinct and may be worn on its own, or in combination with components from the ensemble. The clean, streamlined design and minimal embellishment allows easy transformation of the gown to non-bridal use. Wild silk was selected for the fabric due to its minimal impact on the environment, and its excellent dye absorption properties for post-wedding dyeing.

Rissanen, T. (2005). *From 15% to 0: Investigating the creation of fashion without the creation of fabric waste*. Creativity Designer Meets Technology Europe, 1-10. http://www.scribd.com/doc/51833062/Timo-Rissanen

Wang, M-W., & Montgomery, B. (2013, February). *Thinking outside the blocks*. Paper presented at the First International Symposium for Creative Pattern Cutting, University of Huddersfield, Huddersfield, UK.